

**M-STEP Grade 6 MATHEMATICS Sample**

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No calculators are allowed on items 1 to 7.

1. The equation shown has an unknown number.

$$\square \div \frac{2}{3} = \frac{3}{4}$$

Enter a fraction that makes the equation true.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

## M-STEP Grade 6 MATHEMATICS Sample

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2. Sea level is 0 feet in elevation. The elevation of land represents its height above or below sea level. This table shows the lowest elevation in some states.

State	Lowest Elevation (ft)
Arizona	72
California	- 282
Louisiana	- 68
Tennessee	178

Determine whether each statement about the lowest elevations is correct. Select True or False for each statement.

	True	False
The elevation at the lowest point in California is higher than the lowest point in Louisiana.	<input type="checkbox"/>	<input type="checkbox"/>
The elevation at the lowest point in Tennessee is farther from 0 than the elevation at the lowest point of Louisiana.	<input type="checkbox"/>	<input type="checkbox"/>
The elevation at the lowest point in Louisiana is higher than the lowest point in California.	<input type="checkbox"/>	<input type="checkbox"/>

3. Consider the inequality  $x > 7$ .

Determine whether each value of  $x$  shown in the table makes this inequality true. Select Yes or No for each value.

	Yes	No
22	<input type="checkbox"/>	<input type="checkbox"/>
-7	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>
-39	<input type="checkbox"/>	<input type="checkbox"/>

4. Select all equations that have  $x = 3$  as a solution.

- $x + 7 = 10$
- $3 + x = 3$
- $x \bullet 3 = 1$
- $4 \bullet x = 12$

5. A recipe requires  $\frac{3}{4}$  cup of nuts for 1 cake.

Enter the maximum number of cakes that can be made using  $7\frac{1}{2}$  cups of nuts.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

**6.** Divide

$$16,536 \div 24$$

Enter the quotient.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

**7.** Select all the expressions that are equivalent to

$$8(t + 4).$$

- $2(4t + 2)$
- $8t + 32$
- $4t + 4 + 4t$
- $(8 + t) + (8 + 4)$
- $(8 \times t) + (8 \times 4)$

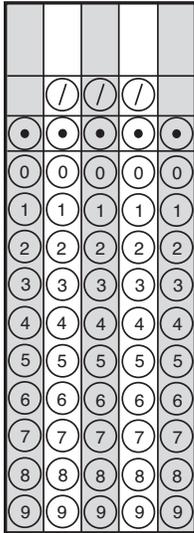
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Calculators allowed on following items.

**8.** Enter the unknown value that makes this statement true:

30% of  is 60.

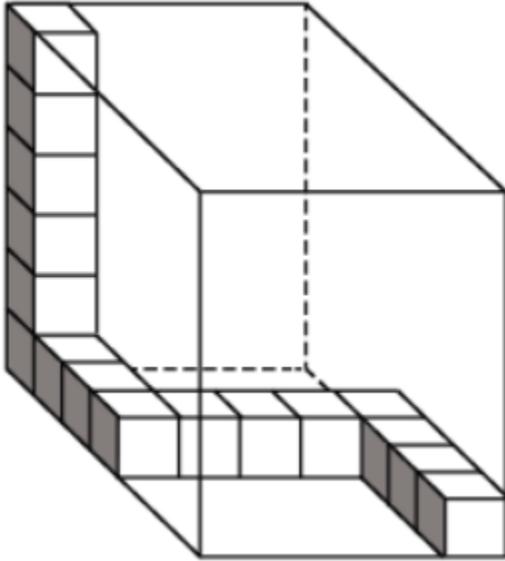


**9.** Carl types 180 words in 2 minutes.

Enter the number of words Carl types in 5 minutes at this rate.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

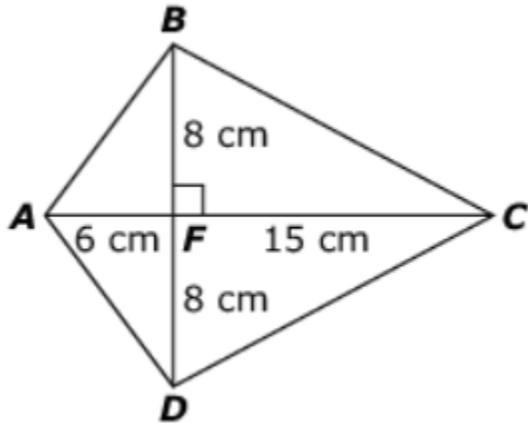
**10.** Brady started to fill the box shown with some unit cubes.



Enter the total number of unit cubes needed to completely fill the box.  
Include the unit cubes already shown in your total.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

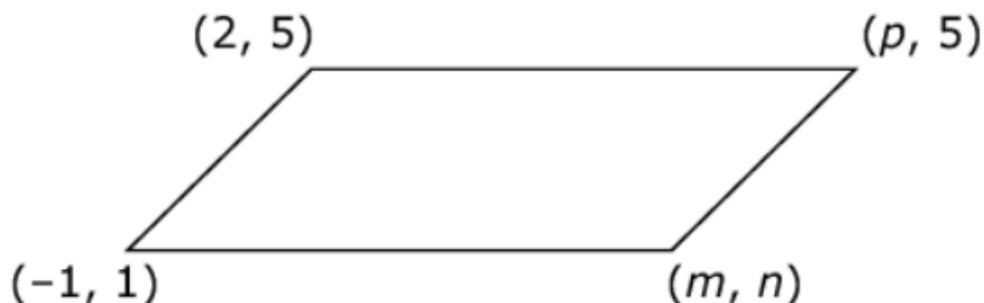
11. Consider this figure.



Enter the total area of figure  $ABCD$  in square centimeters.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

**12.** The coordinates of this parallelogram are given.



Determine if each statement is True or False.

	<b>True</b>	<b>False</b>
The length of the longer side is $p - 2$ .	<input type="checkbox"/>	<input type="checkbox"/>
The length of the longer side is $n + 1$ .	<input type="checkbox"/>	<input type="checkbox"/>
The short side is 4 units in length.	<input type="checkbox"/>	<input type="checkbox"/>
$n = 5$	<input type="checkbox"/>	<input type="checkbox"/>
$m > n$	<input type="checkbox"/>	<input type="checkbox"/>
$p = 2$	<input type="checkbox"/>	<input type="checkbox"/>

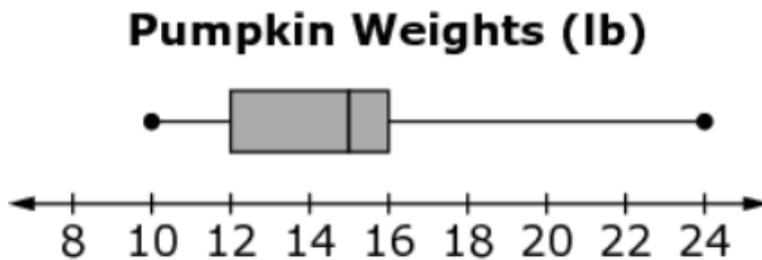
**13.** A statistical question is one where you expect to get a variety of answers. Determine whether each question can be classified as a statistical question. Select Yes or No for each question.

	<b>Yes</b>	<b>No</b>
How many hours a week do people exercise?	<input type="checkbox"/>	<input type="checkbox"/>
How many hours are there in a day?	<input type="checkbox"/>	<input type="checkbox"/>
How many rainbows have students seen this month?	<input type="checkbox"/>	<input type="checkbox"/>

- 14.** This table contains  $x$  and  $y$  values in equivalent ratios. Fill in the missing value in the table.

<b><math>x</math></b>	<b><math>y</math></b>
2	6
5	<input type="text"/>
7	21
9	27

- 15.** Look at the box-and-whisker plot of pumpkin weights.



What is the **median** pumpkin weight?

- A.** 12 lb
- B.** 14 lb
- C.** 15 lb
- D.** 16 lb

**Answer Key**

- 1.**  $\frac{1}{2}$
- 2.** False, True, True
- 3.** Yes, No, Yes, No, No
- 4.**  $x + 7 = 10$ ,  $4 \bullet x = 12$
- 5.** 10
- 6.** 689
- 7.**  $8t + 32$ ,  $(8 \times t) + (8 \times 4)$
- 8.** 200
- 9.** 450 words
- 10.** 210 unit cubes
- 11.**  $168 \text{ cm}^3$
- 12.** True, False, False, False, True, False
- 13.** Yes, No, Yes
- 14.** 15
- 15.** C